

**REMARKS**

Claims 4 and 13-62 were presented for examination, and claims 4 and 13-62 were rejected. Thus, claims 4 and 13-62 are presently pending in this application, of which claims 4, 13, 27 and 49 are independent. Applicant submits that claims 4 and 13-62 are in condition for allowance.

The following comments address all stated grounds of rejection. Applicant respectfully traverses each rejection and urges the Examiner to pass the claims to allowance in view of the remarks set forth below.

**Related Co-Pending Applications**

Applicant directs the Examiner's attention to the following co-pending United States patent applications, which are related to the instant application, and which present for examination claims which the Examiner may consider substantially similar to claims presented in the instant application:

<b>Our Reference No.</b>	<b>Serial No.</b>	<b>Filing Date</b>
APB-017	09/577,225	05-23-2000
APB-018	09/577,224	05-23-2000
APB-019	09/578,156	05-23-2000
APB-022RCE	09/577,232	05-23-2000

Drawing Objection

The Examiner objects to the drawing under 37 C.F.R. §1.83(a) for not showing every feature of the invention specified in the claims. The Examiner indicates the following claim features must be shown in the Figures:

- (a) the reasoning mechanism comprises a state-transition graph as recited in claim 33;
- (b) the reasoning mechanism comprises a codebook reasoning system as recited in claim 34; and
- (c) a value for the service parameter is determined from a value of the parameter for the associated network components as recited in claims 15, 29, and 51.

Applicant respectfully disagrees with the Examiner and contends that the Figures show each of the claim features cited above by the Examiner.

With respect to claims 33 and 34, the monitoring and mapping agents depicted in Figures 17, 18 and 23 comprise the reasoning mechanism of features (a) and (b). Each of the agents (see CSA, AA, IA, TA, TTA of Figures 17, 18 and 23) may implement an analysis of events or alarms using various reasoning paradigms such as rule-based reasoning, model-based reasoning, state-transition graphs, codebooks, case-based reasoning or any combination thereof (see page 49, lines 4-14 of present application). One ordinarily skilled in the art would recognize and appreciate these various reasoning paradigms. From the description and claims of the present application, one ordinarily skilled in the art would understand the reasoning mechanism as represented by the agents in Figures 17, 18 and 23 can include either a codebook reasoning system or a state-transition graph as recited in claims 33 and 34. As such, further detailed description is not necessary for the proper understanding of the claimed invention.

With respect to claims 15, 29, and 51, the feature of a value for the service parameter is determined from a value of the parameter for the associated network components is shown by Figures 1, 28, 29A, 29B, 30 and 31. In particular, Figures 29A and 29B show a representation of a value of a service parameter (see SP (223), Figure 29B) determined from one or more network component parameters (see 1<sup>st</sup> Parameter Split, 2<sup>nd</sup> Parameter Split, 3<sup>rd</sup> Parameter Split of Figure 29B). Figure 30 shows an illustrative example of a service parameter value (see RT of Figure 30) determined from values of network component parameters (see Server 11 paging space, Server 11 CPU time, and Server 11 batch delay off Figure 30). From the description and claims of the present application, one ordinarily skilled in the art would understand that the value of the service parameter is determined from network component parameters. As such, further detailed description is not necessary for the proper understanding of the claimed invention.

For at least the aforementioned reasons, Applicant respectfully submits that corrections to the drawings are not required to show the features cited by the Examiner in the objection.

### **Claim Rejections Under 35 U.S.C. §112, First Paragraph**

#### **I. Claims 33, 34 and 37-43 Rejected Under 35 U.S.C §112, first paragraph**

The Examiner rejects dependent claims 33, 34 and 37-43 under 35 U.S.C. §112, first paragraph, as containing subject matter not described in the specification in such a way as to enable one skilled in the art to make and use the invention. Applicant respectfully traverses this rejection.

##### **A. Claim 33**

Dependent claim 33 recites the limitation of “the reasoning mechanism comprises a state-transition graph reasoning system for determining the condition of the service.” The Examiner

indicates that the specification does not specifically disclose the use of the reasoning mechanism comprising state-transition graph reasoning system. Applicant respectfully disagrees with the Examiner's assertion that this feature is not fully supported in the specification.

For support of this limitation, Applicant respectfully directs the Examiner's attention to page 49, lines 4-12 of the specification and to Figures 17, 18 and 23 of the drawings. One ordinarily skilled in the network management arts will recognize and understand the several fault isolation techniques disclosed in the specification. The specification describes several fault isolation techniques such as case-based, rule-based, model-based, codebooks and state transition graphs. As such, one ordinarily skilled in the art would appreciate using a state-transition based graph reasoning system to provide fault isolation as known in the art. Furthermore, Figures 21 and 22 describe the use of reasoning systems as receiving input (175, Figure 21), such as a new problem (176, Figure 22), from outside of the reasoning system (see page 49, lines 19-20 and page 54, lines 6-9). One ordinarily skilled in the art would further understand how to use a state-transition based graph reasoning system as a fault isolation mechanism to receive input or a new problem in accordance with the specification.

For at least the aforementioned reasons, claim 33 enables one skilled in the art to make and use the invention. Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claim 33 under 35 U.S.C. §112, first paragraph.

B. Claim 34

Dependent claim 34 recites the limitation of "the reasoning mechanism comprises a codebook reasoning system for determining the condition of the service." The Examiner indicates that the specification does not specifically disclose the use of the reasoning mechanism

comprising a codebook reasoning system. Applicant respectfully disagrees with the Examiner's assertion that this feature is not fully supported in the specification.

For support of this limitation, Applicant respectfully directs the Examiner's attention to page 49, lines 4-12 of the specification and to Figures 17, 18 and 23 of the drawings. One ordinarily skilled in the network management arts will recognize and understand the several fault isolation techniques disclosed in the specification, including codebook fault isolation techniques. As such, one ordinarily skilled in the art would appreciate using a codebook reasoning system to provide fault isolation in network management (see page 49, lines 10-11). Therefore, one ordinarily skilled in the art would understand how to use the codebook reasoning mechanism to make or use the claimed invention.

For at least the aforementioned reasons, claim 34 enables one skilled in the art to make and use the invention. Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claim 34 under 35 U.S.C. §112, first paragraph.

#### C. Claims 37-43

Dependent claim 37 recites the limitation of "a rule repository having a rule indicating an operation based on the state of the service, and an inference mechanism selecting the rule from the rule repository applicable to the state of the service." The Examiner indicates that the term "rule repository" is not specifically disclosed in the specification. Applicant respectfully disagrees with the Examiner's assertion that a rule repository is not fully supported in the specification.

For support of this limitation, Applicant respectfully directs the Examiner's attention to page 49, line 15 to page 50, line 20 of the specification and to Figures 21 of the drawings. The

specification and Figure 21 discloses a “rule base” structure comprising rules to apply for a rule-based reasoning system. The term “rule repository” indicates a facility for the storage of rules. One ordinarily skilled in the art would recognize and appreciate that the term “rule repository” as recited in claim 37 would refer to the “rule base” as disclosed in the specification.

For at least the aforementioned reasons, claim 37 enables one skilled in the art to make and use the invention. Claims 38-43 depend on and incorporate the patentable subject matter of dependent claim 37. As such, claims 38-43 enable one skilled in the art to make and use the invention. Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claims 37-43 under 35 U.S.C. §112, first paragraph.

**Claim Rejections Under 35 U.S.C. §112, Second Paragraph**

II. Claims 14, 15, 28, 29, and 50 Rejected Under 35 U.S.C §112, second paragraph

The Examiner rejects claims 14, 28 and 50 under 35 U.S.C. §112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as his invention. Claims 15 and 29 are rejected under 35 U.S.C. §112, second paragraph, because they depend on claims 14 and 28, respectively. Applicant respectfully traverses this rejection.

Claims 14, 28, and 50 recite that the service parameter comprises a variable having a state which represents an operational characteristic of the service provided by the network. Specifically, the Examiner indicates that the specification teaches different parameters and values but that it is unclear as which parameters and values are states, or what the state is specifically representing. Applicant contends that one ordinarily skilled in the art can ascertain with a reasonable degree of clarity and particularity the subject matter recited in claims 14, 28

and 50. The service parameter includes one or more variables which represent an expression that can change. The state of the variable is a value of the variable at a certain point in time. The state represents an operational characteristic of the service provided by the network. As such, the language of these claims has a distinct meaning and scope such that one ordinarily skilled in the art would reasonably and clearly understand these claim limitations as recited. Therefore, claims 14, 28 and 50 particularly point out and distinctly claim the subject matter which the Applicant regards as his invention.

For at least the aforementioned reasons, Applicant submits that claims 14, 28 and 50 comply with the requirements for 35 U.S.C. §112, second paragraph. Claim 15 depends on and incorporates the patentable subject matter of claim 14. Claim 29 depends on and incorporates the patentable subject matter of claim 28. As such, claims 15 and 29 comply with the requirements for 35 U.S.C. §112, second paragraph. Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection to claims 14-15, 28-29, and 50 under 35 U.S.C. §112, second paragraph.

### **Claim Rejections Under 35 U.S.C. §102**

#### **III. Claims 4, 13-17, 19-35, 37-53 and 55-62 Rejected Under 35 U.S.C. §102 As Being**

#### **Anticipated By Yemini**

Claims 4, 13-17, 19-35, 37-53 and 55-62 rejected as being anticipated by U.S. Patent No. 6,249,755 to Yemini et al. ("Yemini"). Applicant respectfully traverses this rejection.

For convenience of the discussion of the rejection by the Examiner to follow below, summaries of the claimed invention and the references cited in the rejection are described separately.

A. Summary of the Claimed Invention

The claimed invention is directed towards a method for monitoring a service to determine a state of the service supporting a business process under *service level management* (“SLM”) in association with a *service level management domain*. SLM measures the performance of business processes in relation to associated services using a portion of an enterprise’s network infrastructure. SLM methods help an owner or user of a business process understand the relationship between the enterprise network infrastructure, services and the return on investment in regards to the operational state of the business process depending on the enterprise network infrastructure and services.

An SLM domain encompasses the objects concerned with business processes, associated services, and the management of the service level of business processes as part of managing an enterprise. The SLM domain includes an enterprise management system which includes the integration of multiple management systems such as a network, system, application and traffic management systems. A service associated with SLM is a function that the enterprise network provides for the business in support of performing the business processes. The service is an abstraction over and above the enterprise network that arises in virtue of the structure and operation of the network. In turn, a service may depend on the performance of network components that support the service. Network components associated with SLM generally include transmission devices, transmission media, computer systems and applications. As such, by monitoring network components supporting the service, the state of the service may be determined.



In the claimed invention, network components are associated with services supporting a business process under SLM associated with a SLM domain. Monitoring mechanisms monitor the associated network components to determine one or more parameters indicating operational characteristics of the network components. A state of the service can be determined from the parameters of the monitored network components. The service is monitored to determine operational characteristics of the service from the determined state of the service. Since the service supports a business process, the monitoring of the service supports determining a service level in managing the business process.

#### B. Summary of Yemini

Yemini is directed towards a code-based event correlation and management system and is concerned with efficiently determining problem events from observable symptoms. Yemini describes a method for performing event correlation to determine the source of a problem in a complex system of management components based upon systems. Instead of using methods such as rule-based reasoning, case-based reasoning, model-based reasoning and probability networks, Yemini describes an event correlation system using code-based reasoning. The code-based event management system of Yemini provides codes of symptom events for problem identification and decodes a stream of event information to match symptom events to the codes. In this manner, Yemini can correlate events from event information to problem codes to generate trouble tickets. As such, Yemini discloses a very specific fault management technique referred to in the art as code-based event correlation, and is not concerned with service level management as in the claimed invention.

C. Independent Claims 4, 13, 27 and 49 Patentable over Yemini

Independent claims 4 and 13 are directed to methods, and independent claims 27 and 49 are directed to a system and computer program product, respectively. These independent claims recite monitoring a state of a service supporting a business process under *service level management* in association with a *service level management domain* by monitoring network components mapped to the service to determine the state of the service.

Yemini does not disclose monitoring a state of a service supporting a business process under *service level management* in association with a *service level management domain*. Instead, Yemini is focused on a discussion of a particular type of event correlation system using code-based reasoning. In the claimed invention, the recitation of *service level management* in association with a *service level management domain* has a distinct meaning and scope (see page 19, line 1 to page 20, line 10; and Figure 1 of present application). *Service level management* measures the performance of business processes in relation to services supporting the business processes using a portion of a network. A *service level management domain* indicates a scope of interest associated with performing *service level management* of the business process. As such, *service level management* is concerned with understanding the relationship between a business process and a service, and the operational efficiency of portions of the network in support of the service supporting the business process.

In contrast, Yemini discusses a code-based event correlation approach to detecting and identifying problems in complex systems. Yemini does not disclose *service level management* or a *service level management domain* because Yemini does not provide *service level management* associated with a *service level management domain*. Rather, Yemini provides event correlation

for generating a trouble ticket. As such, Yemini is concerned with isolating a fault instead of *service level management*. Therefore, Yemini fails to disclose monitoring a state of a service supporting a business process under *service level management* in association with a *service level management domain*.

At least for the aforementioned arguments, Applicant submits that Yemini fails to anticipate each and every element of independent claims 4, 13, 27 and 49. Claims 14-17 and 19-26 depend on and incorporate all the patentable subject matter of independent claim 13. Claims 28-35 and 37-48 depend on and incorporate all the patentable subject matter of independent claim 27. Claims 50-53 and 55-56 depend on and incorporate all the patentable subject matter of independent claim 49. As such, Yemini fails to anticipate each and every element of dependent claims 14-17, 19-26, 28-35, 37-48, 50-53 and 55-56. Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of claim 4, 13-17, 19-35, 37-53 and 55-62 under 35 U.S.C. §102.

### **Claim Rejections Under 35 U.S.C. §103**

#### **IV. Claims 18, 36 and 54 Rejected Under 35 U.S.C §103 As Being Unpatentable Over Yemini in view of Glitho**

Claims 18, 36 and 54 rejected as being unpatentable over Yemini in view of U.S. Patent No. 6,233,449 to Glitho et al. ("Glitho"). Applicant respectfully traverses this rejection and contends that Yemini in view of Glitho fails to detract from the patentability of dependent claims 18, 36, and 54.

A. Non-obviousness of Claims Dependent from Patentable Independent Claims 13, 27, and 46

Yemini in view of Glitho fails to teach or suggest each and every claim limitation of dependent claims 18, 36, and 54. Claim 18 depends on and incorporate all the patentable subject matter of independent claim 13. Claim 36 depends on and incorporate all the patentable subject matter of independent claim 27. Claim 54 depends on and incorporate all the patentable subject matter of independent claim 46. Yemini does not anticipate claims 13, 27 and 46 for the reasons discussed in connection with the claim rejections under 35 U.S.C. §102. As such, claims 18, 36 and 54 are also not anticipated by Yemini.

Yemini in view of Glitho does not teach or suggest monitoring a state of a service supporting a business process under *service level management* in association with a *service level management domain*. As discussed above with respect to independent claims 13, 27, and 46, Yemini does not disclose monitoring a state of a service supporting a business process under *service level management* in association with a *service level management domain*. Examiner cites Glitho merely to suggest the one ordinarily skilled in the art might modify Yemini to use an agent associated with a monitored network component. As such, Glitho fails to bridge the factual deficiencies of the Yemini reference. Therefore, Yemini in view of Glitho fails to teach or suggest monitoring a state of a service supporting a business process under *service level management* in association with a *service level management domain*.

For at least the aforementioned reasons, Applicant submits that Yemini in view of Glitho fails to detract from the patentability of claims 18, 36 and 54. Accordingly, Applicant respectfully requests the Examiner to withdraw the rejection of claims 18, 36 and 54 under 35 U.S.C. §103.

**CONCLUSION**


In light of the aforementioned arguments, the Applicant contends that the Examiner's rejection has been adequately addressed and all of the pending claims are in condition for allowance. Accordingly, Applicant respectfully requests reconsideration, withdrawal of all grounds of rejection, and allowance of all of the pending claims.

Should the Examiner feel that a telephone conference with Applicant's attorney would expedite prosecution of this application, the Examiner is urged to contact the Applicant's attorney at the telephone number identified below.

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Respectfully submitted,

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